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Surveys of Journal Use in the Library of the University of Surrey, 1972-1975. A Methodology

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Over the past three decades, librarians have devoted a great deal of attention to assessment of the use made of books and journals, - Line and Sandison (1) included an exhaustive list of studies in their review of obsolescence and changes in the use of literature with time. The majority took their data from circulation records, which were readily available as far as books were concerned, as well as for journals where these were loaned. Sampling has often been used (e.g. Jain) (2) while studies carried out by NLLST such as those by Wood and Bower (3,4) on biomedical and social science periodical literature had ample statistics close at hand.

Problems arise when an academic library wishes to review the use being made of its journals collection when those journals are on display on the open shelves, but not subject to any circulation procedures. Investigations have been carried out into specific subject areas where this purely reference element applies, - for example physics journals at M.I.T. (Chen) (5) and chemistry journals at the University of Surrey (Panton and Reuben) (6) In both these cases the procedures were explained, but little help is to be had from the literature when considering a full-scale, long-term survey of journal use.

It was such a full-scale study which had to be undertaken some years ago in the University of Surrey Library. Because of escalating journal subscription costs, it had become clear at that time that some reduction would have to be made in the 2800 titles currently taken. The percentage increase in Book Fund per annum was in no way matching increases in prices, and thus an excessive proportion of available funds was being taken to pay for existing subscriptions, to the detriment of book purchasing. In the circumstances it became difficult to add new journal titles, even when new university courses were introduced.

Journal use was decided on as the most satisfactory criterion in limiting expenditure, but because of the absence of statistics on which to base a survey, some reasonably painless method had to be found of assembling the necessary data. It was agreed that all titles must be surveyed, not merely a sample, and that to obtain any kind of accurate assessment, a short-term study would be of little value. A period of one calendar year was decided on, the process to continue through term and vacation alike.

Since no additional funds or staff were to be had, any tasks performed needed to fit easily into the routines of the Journals Section, which consisted at that time of one Assistant Librarian and three Library Assistants. The method chosen was to attach a paper slip to the cover of every incoming journal issue; slips bore the heading - 'Survey of Journals Use', and included the request that users should write the date of each consultation. Current issues only were included in the scheme. Publicity was given to the survey and a start made in January, 1972. Journals assistants attached the slips, which were 6" x 4" in size and pre-gummed, at the same time that issues were recorded and ownership-stamped. Issues already on display needed special attention, but this was a once-only task, and was easily fitted in. Care was taken to affix the slips by one edge only, so that vital information on the front cover should not be obscured. If the cover material prevented adhesion, stapling was used. Cost of stationery and printing (by the University Printing Unit) was met from current library funds.

It should be explained that in the University of Surrey Library current issues are displayed on the open shelves in two main areas, Science and Engineering on the one

hand, Human Studies on the other, separately from the bound volumes. As soon as a current volume is complete and the first issue of the next volume has arrived, the journal is removed for binding or other processing. Thus there was no need for further action until the time came for the journal to be taken from the current shelves. At this point assistants totalled the dates on the slips and entered them on a master computer print-out of the journals stock. Since journals were stored prior to despatch to the binder, readers often asked to see issues, and this additional use was recorded.

At the end of the year a final check was made, and the record on the journals list completed.

That this scheme had drawbacks was realised from the outset. There would be those who, for one reason or another, would not complete the slips. Others might attempt for a while to distort by registering imaginary consultations. However, it was considered that over a period of twelve months such imperfections would not materially affect the general picture.

A more serious consideration was whether a survey of current issues alone constituted a valid appraisal of the whole use made of a journal. On this point the view was held that some measure of correlation existed between current and retrospective use. There was, moreover, an urgent need for the survey to be started, and at that period there were difficulties in the way of including the whole stock in the scheme.

On the basis of the data assembled, lists of little-used titles were drawn up, and negotiations entered into with academic representatives regarding possible cancellations. Initially, a 10% reduction was aimed for, and in fact at the end of 1973 a total of 226 titles ceased to be subscribed to. During the next two years there were further cancellations, bringing the total to 520.

The intention was never to resort to irrevocable decisions, and not surprisingly, some mistakes were made which had to be rectified. But of the journals cancelled, only 19 had subsequently to be re-instated.

Conclusions reached during this survey of current issues made it evident that, ideally, some kind of continual review should take place, so that changes in use patterns could be be identified. It appeared desirable that the main body of journals should receive attention, and that data should be collected which would reveal, not merely quantitative use, but the spread of use over the years. The implications for future storage might then be considered.

Thus a further scheme was drawn up to cover bound volumes of journals on two floors of the library. Similar conditions applied, in that a large body of stock had to be examined, and the survey was to be of one year's duration. Again the work was to be done as part of the general routines, but in this case a different approach was employed, namely the day-to-day recording of consultations based on volumes removed from the shelves.

Notices were displayed throughout the floors in question, announcing the intention to carry out the survey, and requesting readers to re-shelve on its fore-edge each volume consulted.

The survey began in January 1975, and as part of the early morning tidying routine the journals staff recorded details of volumes which had been removed from the shelves, and either left on the study desks, or replaced on the shelves in the manner requested, or taken away for photocopying. The initial record was kept on old copies of the library's journals catalogue, - bound volumes of type-reduced computer print-out which were easily transportable around the shelves, and which had adequate space for the details. Another advantage was that the arrangement of this catalogue, alphabetical by journal title, closely followed that of the journals on the shelves.

Information collected was restricted to the year of publication (rather than volume number). It was considered that in analysing particular sets of figures at a later stage,

the year would provide more valuable clues in determining the spread of use.

Data was transferred at a later stage to 5" x 3" cards for ease of re-shuffling into different sequences. Collection of data continued through-out 1975, each morning, Monday to Friday, during both term and vacation. Insufficient staff were on duty on Saturdays and Sundays in term-time to carry out the task on those days, but week-end use was recorded each Monday morning. The original intention was to have staff checking the collection twice each day, so as not to lose multiple daily consultations, but this proved impracticable, and the routine was restricted to mornings between 9.00 and 10.00. Thus approximately two hours staff time was devoted to the survey each week-day, with occasional further periods spent on the transfer of data to cards.

The information now assembled will be used in a variety of ways. Already it has given a clearer picture regarding frequency and infrequency of use, and a ranking list has been drawn up. We have dealt with crude use figures so far, though it is intended to relate the information gathered to other factors such as cost and size of holding, and to plan storage accordingly. Inter-library loans will also come into consideration. Since both currently taken journals and those which, for one reason or another are no longer subscribed to, have been included in the survey, it is possible to make adjustments where obvious mistakes and discrepancies are apparent. Some measure of correlation is discoverable between data for current issues and back runs, but more work needs to be done in this area.

As with the survey of current issues, weaknesses and distortions must occur, - for the same reasons. But there are grounds for believing that here, too, duration of the survey will serve to remove some inconsistencies and lead towards an overall picture where the relative use value of a journal is perhaps more important. No attempt has been made at qualitative evaluation. What constitutes a consultation? How much has been browsing, or futile searching or discovering that one has the wrong volume? And how much fruitful perusal of key papers? These questions cannot be answered by the methods described.

The policy of Surrey University Library is to regard those journals which the surveys indicate as having been minimally used, as candidates for possible cancellation. Some immediate reservations need to be made - 'core' journals, or other of special importance, would not be considered, even though they were little used. Some members of the academic staff subscribe to their own core journals, or regularly use their Society Libraries in London, and such activities necessarily have to be taken into consideration when decisions are made about a journal's future. But the surveys have at least provided hard facts to set against mere opinion and speculation on relative merits.

Immense problems are involved in bringing about a reduction in subscription costs. Academics have been used to having most journals immediately available, and resent the loss of even the most obscure publication. However, they are now becoming gradually aware of the cost of maintaining a collection of journals, and of the enormous inflationary increases each year. They accept that something has to be done, if only to enable new subscriptions to be placed.

The situation does not remain static. Journals rise and fall in popularity, university courses change, areas of research become worked out. Whatever the future holds regarding financial provision, it is likely that storage will be a recurring problem, and therefore some kind of check will always be necessary. It is intended to continue the policy of use surveys here, so that up-to-date information is continually available.

It is not supposed that in the matter of Journals use very many general conclusions can be drawn. That which may be possible, or desirable, in one library will clearly not be so in another. This paper has been merely a description of the way one academic library obtained information about its collection. But it is hoped that aspects of the task involved may be of interest to those whose problems are not dissimilar.

Figure 1

RANKING ORDER - Fifty most frequently used journals.

No.	Title	Times used in year.
1.	Nature	698
2.	Chemical Abstracts	549
3.	Journal of the American Chemical Society	533
4.	Biochemical Journal	509
5.	Journal of the Chemical Society	488
6.	British Medical Journal	444
7.	Journal of Biological Chemistry	443
8.	Biochemica et Biophysica Acta	430
9.	Lancet	424
10.	Journal of the Acoustical Society of America	414
11.	Journal of Chemical Physics	289
12.	Physical Review	255
13.	Industrial and Engineering Chemistry	241
14.	Science	235
15.	Journal of Applied Physics	230
16.	Proceedings, Institution of Mechanical Engineers	212
17.	Psychological Abstracts	206
18.	American Journal of Clinical Nutrition	195
19.	Biological Abstracts	188
20.	Journal of Bacteriology	182
21.	Analytical Chemistry	179
22.	Clinica Chimica Acta	156
23.	Scientific American	150
24.	Journal of General Microbiology	147
25.	Journal of Cell biology	140
26.	Proceedings of the Royal Society, 'A'	131
27.	Journal of Applied Physiology	130
28.	Biochemical Pharmacology	126
29.	Transactions, Inst. Marine Engineers	125
30.	Journal of the Institute of Fuel	124
31.	Beilstein	120
32.	Journal of the Electrochemical Society	119
33.	British Journal of Nutrition	116
34.	Biochemical & Biophysical Research Communications	115
35.	British Journal of Hospital Medicine	114
36.	Biochemistry	113
37.	Journal of Physiology	112
38.	Archives of Biochemistry & Biophysics	111
39.	Proceedings, National Academy of Sciences	110
40.	Analytical Biochemistry	108
41.	Journal of Clinical Investigation	107
42.	Journal of Chromatography	105
43.	Psychological Review	104
44.	Journal of Physical Chemistry	99
45.	Mathematical Reviews	99
46.	Journal of the Optical Society of America	98
47.	Journal of Organic Chemistry	97
48.	American Journal of Physiology	96
49.	American Sociological Review	95
50.	Acta Crystallographica	92

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All current use surveyed (First 100 titles)

Ranking No.	Title	Times Used
1.	Nature	400
2.	New Scientist	397
3.	J. Organic Chemistry	334
4.	Chemical Abstracts	320
5.	Current Contents - Life Sciences	263
6.	J. American Chemical Society	250
7.	J. Chem. Society	228
8.	Current Contents - Physical and Chemical Sciences	180
9.	Excerpta Medica	168
10.	Wireless World	139
11.	Lancet	134
12.	J. American Medical Association	124
13.	Contents of recent economics journals	113
14.	Scientific American	112
15.	Machine Design	110
	Physics Abstracts	110
17.	Br. Medical Journal	108
18.	Nursing Times	101
19.	Clinical Chemistry	100
	Electronics	100
21.	Electronics Letters	99
22.	J. Physics	91
23.	Biochemistry	90
24.	J. Physical Chemistry	88
25.	Tetrahadron Letters	86
26.	Trans. ASME	85
27.	Chemical Communications	82
28.	Chemical Titles	80
29.	J. Inorganic & Nuclear Chemistry	71
30.	Am. J. Clinical Nutrition	70
	Biochemical Pharmacology	70
32.	Acta Metallurgica	69
	J. Chem. Education	69
34.	Inorganic Chemistry	66
35.	Engineering	65
35.	J. Applied Physics	65
	J. Biological Chemistry	65
38.	Proc. Nat. Acad. Sciences	64
39.	Social Work Today	63
	J. Chemical Physics	63
41.	Caterer and Hotel Keeper	60
	Metals Abstracts	60
43.	New Law Journal	59
44.	Catering Times	57
	J. Inst. Fuel	57
	IEEE Trans. on Electron Devices	57
	Nuclear Physics	57
48.	Chemical Engineering Science	56
49.	Br. Technology Index	55
50.	Electronics Weekly	54
	Philosophical Magazine	54
	Proc. Royal Society A.	54
53.	Nutrition Reviews	53
54.	Flight International	52

	Nursing Mirror	52
56.	Canadian J. Physics	49
57.	Applied Physics Letters	48
	Biochem. Biophys. Research Comm.	48
59.	Chemistry and Industry	47
60.	Biochemical J.	46
	Physical Review	46
62.	Time	45
63.	Angewandte Chemie	44
	Fairplay International Shipping Journal	44
	Biotechnology and Bioengineering	44
	Surveyer	44
67.	Physics Today	43
68.	Applied Optics	42
	Biomedical Engineering	42
70.	Construction News	41
	J. Optical Society of America	41
72.	New Statesman	39
	Proceedings IEE	39
	Psychological Abstracts	39
	Food Manufacture	39
	Int. J. Solids and Structures	39
	Phytopathology	39
78.	Trans. Faraday Society	38
	Rock Products	38
	Structural Engineer	38
	Acta Chemica Scandinaviea	38
82.	Air Transport World	37
	Am. J. Physics	37
	Futures	37
	J. Pharmacy and Pharmacology	37
	Applied Mechanics Reviews	37
	National Geographic	37
88.	Contract Journal	36
	J. Bacteriology	36
	OECD Observer	36
91.	Br. J. Hospital Medicine	35
	New England J. Medicine	35
	Child Development	35
	Energy Internat.	35
	Astrophysical Journal	35
	Marine Engineers Review	35
	Philosophy and Phenomenological Research	35
	Proceedings IEEE	35
99.	AIAA Journal	34
	Australian J. Chemistry	34

100 most frequently used journals (back issues)

Ranking No.	Title	Times Used in year
1.	Nature	698
2.	Chemical Abstracts	549
3.	J. American Chemical Society	533
4.	Biochemical Journal	509
5.	J. Chemical Society	488
6.	Br. Medical Journal	444
7.	J. Biological Chemistry	443
8.	Biochimica et Biophysica Acta	430
9.	Lancet	424
10.	J. Acoustical Society of America	414
11.	J. Chemical Physics	289
12.	Physical Review	255
13.	Industrial and Engineering Chemistry	241
14.	Science	235
15.	Journal of Applied Physics	230
16.	Proc. Inst. Mech. Eng.	212
17.	Psychological Abstracts	206
18.	American J. Clinical Nutrition	195
19.	Biological Abstracts	188
20.	J. Bacteriology	182
21.	Analytical Chemistry	179
22.	Clinica Chimica Acta	156
23.	Scientific American	150
24.	J. General Microbiology	147
25.	J. Cell Biology	140
26.	Proc. Royal Society. 'A'.	131
27.	J. Applied Physiology	130
28.	Biochemical Pharmacology	126
29.	Trans. Inst. Marine Engineers	125
30.	J. Inst. Fuel	124
31.	Beilstein	120
32.	J. Electrochemical Soc.	119
33.	Br. J. Nutrition	116
34.	Biochemical I. & Biophysical Research Comm.	115
35.	Br. J. Hospital Medicine	114
36.	Biochemistry	113
37.	J. Physiology	112
38.	Archives of Biochemistry and Biophysics	111
39.	Proceedings Nat. Acad. Sciences	110
40.	Analytical Biochemistry	108
41.	J. Clinical Investigation	107
42.	J. Chromatography	105
43.	Psychological Bulletin	104
44.	J. Physical Chemistry	99
	Matematical Reviews	99
46.	J. Optical Society of America	98
47.	J. Organic Chemistry	97
48.	American J. Physiology	96
49.	American Sociological Review	95
50.	Acta Crystallographica	92
	Cancer Research	92
52.	Proc. Soc. Experimental Biology and Medicine	91
53.	Toxicology and Applied Pharmacology	90
54.	Annual Review of Biochemistry	89

	Chemical Engineering Science	89
	J. American Medical Assn	89
	Trans. A.S.M.E.	89
58.	Br. Medical Bulletin	88
59.	J. Molecular Spectroscopy	86
60.	A.I.Ch.E. Journal	84
61.	Annual Review of Psychology	82
	Nuclear Physics	82
	Philosophical Magazine	82
	Prc., Nutrition Soc.	82
65.	FEBS Letters	81
	Food and Cosmetics Toxicology	81
	Proc. Cambridge Philosophical Society	81
68.	Clinical Chemistry	79
	European J. Biochemistry	79
70.	Applied Microbiology	77
	Applied Optics	77
	Trans Faraday Soc.	77
73.	Br. J. Radiology	76
74.	J. Biomechanics	75
	Physiological Reviews	75
76.	J. Molecular Biology	73
	Psychological Review	73
78.	Inorganic Chemistry	72
	New England J. Medicine	72
80.	Acta Metallurgica	71
	Annals New York Aca. Sciences	71
82.	Economist	70
83.	American Economic Review	69
	IEEE Trans on Antennas and Propagation	69
85.	Index Medicus	68
	J. Pharmaceutical Sciences	68
	Nutrition Reviews	68
88.	Review of Scientific instruments	67
	Spectrochimica Acta	67
	Ultrasonics	67
91.	American J. Physics	66
	Chemical Engineering Progress	66
	Chemical Reviews	66
94.	Br. J. Sociology	65
	J. Physics	65
	Physics in medicine and Biology	65
	Sociological Review	64
98.	Br. J. Aesthetics	64
99.	Federation Proceedings	63
100.	J. Pharmacology and Experimental Therapeutics	63

First 100 Titles where comparison is possible between current and back run use.

Ranking No. Current.	Back run.	Title	Times used (Current)	Times Used (back issues)
1	(1)	Nature	400	698
2	(47)	J. Organic Chemistry	334	98
3	(2)	Chemical Abstracts	320	549
4	(3)	J. American Chemical Society	250	533
5	(5)	J. Chemical Society	228	488
6	(245)	Excerpta Medica	168	27
7	-	Wireless World	139	
8	(9)	Lancet	134	424
9	(56)	J. American Medical Assn.	124	89
10	(23)	Scientific American	112	150
11	-	Machine Design	110	
	(276)	Physics Abstracts	110	25
13	(6)	British Medical Journal	108	444
14	(68)	Clinical Chemistry	100	79
	(101)	Electronics	100	62
16	(303)	Electronics Letters	99	22
17	(94)	J. Physics	91	65
18	(36)	Biochemistry	90	113
19	(44)	J. Physical Chemistry	88	99
20	(241)	Tetrahedron Letters	86	27
21	(54)	Trans. A.S.M.E.	85	89
22	(176)	Chemical Communications	82	36
23	(151)	J. Inorganic & Nuclear Chemistry	71	42
24	(18)	Am. J. Clinical Nutrition	70	195
	(28)	Biochemical Pharmacology	70	126
26	(80)	Acta Metallurgica	69	71
	(128)	J. Chemical Education	69	46
28	(78)	Inorganic Chemistry	66	72
29		Engineering	65	
	(15)	J. Applied Physics	65	230
	(7)	J. Biological Chemistry	65	443
32	(39)	Proceedings Nat. Acad. Sciences	64	110
33	(172)	Social Work Today	63	37
	(11)	J. Chemical Physics	63	289
35	-	Caterer and Hotel Keeper	60	
	(196)	Metals Abstracts	60	33
37	(261)	New Law Journal	59	25
38	(30)	J. Inst. Fuel	57	124
	(135)	IEEE Trans on Electron Devices	57	45
	(61)	Nuclear Physics	57	82
41	(54)	Chemical Engineering Science	56	89
42		Br. Technology Index	55	
43	(61)	Philosophical Magazine	54	82
	(26)	Proceedings Royal Society A	54	131
45	(85)	Nutrition Reviews	53	68
46		Flight International	52	
47	(162)	Canadian J. Physics	49	39
48	(126)	Applied Physics Letters	48	46
	(34)	Biochem. Biophys Research Comm.	48	115
50	(231)	Chemistry and Industry)	47	28
51	(4)	Biochemical Journal	46	509
	(12)	Physical Review	46	255

53	(213)	Angewgevandte Chemie	44	31
		Fairplay International Shipping J.	44	
	(188)	Biotechnology and Bioengineering	44	34
56	(338)	Physics Today	43	19
57	(70)	Applied Optics	42	77
	(121)	Biomedical Engineering	42	48
	(46)	J. Optical Society of America	41	98
60	(151)	Proceedings IEE	39	42
	(17)	Psychological Abstracts	39	206
		Food Manufacture	39	
		International J. Solids & Structures	39	
	(111)	Phytopathology	39	52
65	(70)	Transactions, Faraday Society	38	77
		Rock Products	38	
		Structual Engineering	38	
	(112)	Acta Chemica Scandinavica	38	51
69		Air Transport World	37	
	(91)	Am. J. Physics	37	66
	(324)	J. Pharmacy and Pharmacology	37	20
	(338)	Applied Mechanics Reviews	37	19
74	(20)	J. Bacteriology	36	182
75	(35)	Br. J. Hospital Medicine	35	114
	(78)	New England J. Medicine	35	72
	(164)	Child Development	35	38
		Astrophysical Journal	35	
		Marine Engineers Review	35	
		Philosophy and Phenomenological Research	35	
	(135)	Proceedings IEEE	35	45
82	(353)	A.I.A.A. Journal	34	18
	(223)	Australian J. Chemistry	34	29
84	(460)	Trade and Industry	33	13
	(8)	Biochm. Biophys. Acta	33	430
		Aeronautical J.	33	
		Canadian J. Botany	33	
	(373)	Design	33	
		Matematische Annalen	33	
90	(68)	European J. Biochemistry	32	79
	(261)	Endocrinology	32	25
	(116)	Comptes Rendus	32	49
	(188)	Chemical Engineering	32	34
	(53)	Toxicology and Applied Pharmacology	32	90
95	(82)	Economist	31	70
	(196)	Process Biochemistry	31	33
97	(231)	Am. Mathematical Monthly	30	28
	(231)	Br. J. Preventive & Social Medicine	30	28
		Control and Instrumentation	30	
		Engineering Materials & Design	30	